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AGO d/a ltr, 29 Apr 1980

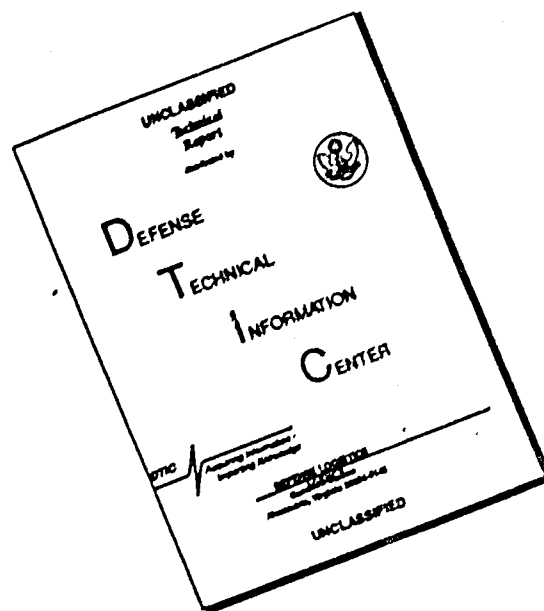
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IN REPLY REFER TO
AGAM-P (M) (2 Feb 68) FOR OT RD-674105

6 February 1968

SUBJECT: Operational Report - Lessons Learned, Headquarters, 87th Engineer Battalion (Const), Period Ending 31 October 1967

TO: SEE DISTRIBUTION

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2. Information contained in this report is provided to insure appropriate benefits in the future from Lessons Learned during current operations, and may be adapted for use in developing training material.

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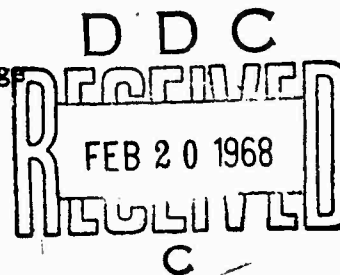
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DEPARTMENT OF THE ARMY
HEADQUARTERS, 87TH ENGINEER BATTALION (CONSTRUCTION)
APO 96312

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EGACBB-AD

10 November 1967

SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65) for Quarterly
Period Ending 31 October 1967

THRU: Commanding Officer
35th Engineer Group (Construction)
ATTN: EGA-3
APO 96312

Commanding General
18th Engineer Brigade
ATTN: AVBC-C
APO 96377

Commanding General
U.S. Army Engineer Command, Vietnam (Prov)
ATTN: AVCC-P&O
APO 96491

Commanding General
United States Army, Vietnam
ATTN: AVHGC-DH
APO 96307

Commander in Chief
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10 November 1967

SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65) for Quarterly
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Section I, Significant Unit Activities.

1. Command: During the period of this report the 87th Engineer Battalion (Construction) was commanded by LTC CHARLES J. FEALA.

2. Personnel, Administration, Morale, Discipline:

a. During the current quarter personnel losses continued to outweigh gains. The battalion's assigned strength decreased from 942 on 31 July 1967 to 829 on 31 October 1967.

b. There were 0, 41 and 3 class I, II and III offenses respectively during the quarter which represents an increase in the Class II figure over the previous reporting period. It is felt that adjustment problems associated with the large influx of new personnel during August and September is a major contributing factor.

c. Morale and attendance at religious services remained high.

d. A softball diamond was constructed during this quarter and is now used for scheduled athletic events. A Chess Club has been started under the sponsorship of the Battalion Surgeon with weekly meetings.

3. Plans, Operations and Training:

a. The battalion performed construction operations for 78 days during the period and conducted training for 7½ days.

b. The following major construction was accomplished by the battalion during the period:

(1) Installation Storage Warehouse, Phan Rang: This project required erecting seven (7) each 40' x 100' prefabricated, steel, Pasco Warehouses to provide a total storage area of 28,000 square feet. Two (2) of the buildings were joined to form one 80' x 100' building. Four (4) more were joined to provide a single 160' x 100' warehouse facility. This building was left as an open storage shed with only a roof and concrete slab as the result of a stop order on all work in Phan Rang. The seventh building was constructed as a single unit. The project was started on 5 April and completed on 1 October 1967. A total of 66,127 man-hours were expended to complete the facility.

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(2) Officers Open Mess (Self-Help): This project consists of constructing a 17,000 square foot tropicalized wood frame Officers Open Mess. Design of this building was provided by OICC. Construction of the facility is by user self-help with materials, engineer supervision and technical assistance being provided by this unit. The concrete work, walls and roof trusses have been erected and galvanized corrugated roofing is now being placed. The entire project is 32% complete with 8,686 man-hours having been expended to date.

(3) Quarry Operations: On 20 May 1967, the Battalion assumed the responsibility for one of the largest quarry operations given any military unit in Viet Nam. Located in the heart of the Cam Ranh Peninsula, this vital granite quarry is being operated by the Equipment and Maintenance Company of the Battalion. With a 28-man quarry section, without augmentation, this company has placed in operation a 75 TPH Primary Jaw Crusher and 225 TPH Washing and Screening Plant. The latter plant consists of a primary jaw crusher, two (2) intermediate roll crushers and a screening unit. In addition to this array of crushing capability, various pieces of equipment have been added to complement the system including seven (7) Euclid 22-ton dump trucks, two (2) D9 dozers, four (4) track drills, three (3) 600 CFM air compressors, a D8 dozer and a 60-ton crane-shovel from RMK. Since additional personnel were not available, the company has reinforced the Quarry Section with its Equipment Section to perform this mission. Some relief was afforded when the 610th Engineer Company (CS) recently arrived in Viet Nam. For the past two months this company has operated one organic 75 TPH primary crusher formerly operated by battalion personnel.

(a) Rock production includes: 3" (-), 1½" (-), 1" (-), ¾" (-), ⅜" (-) and decomposed granite (D/G). All products are being used by Engineer units throughout 35th Engineer Group, Post Engineer, ARVN and ROKA units for fill material, road base, asphalt cement aggregate, concrete aggregate and stabilization material.

(b) Materials stockpiled as of the last day of the reporting period are as follows:

3" (-)	16,323 Cubic Yards
2" (-)	1,035 " "
1½"	545 " "
1¼" (-)	347 " "
¾" (-)	569 " "
Total Material Stockpiled	18,819 Cubic Yards

(4) Ammunition Storage Area C: Since the last reporting period the construction of the eighty (80) each 71' x 99' ammunition pads (including aprons) has been divided into five (5) phases for completion. Phase one (1)

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consists of 21 pads, all of which are to be bermed on three sides, and approximately 3.3 miles of sand-cement stabilized access roadways. Completion date for this phase is set for 26 December 1967. At the conclusion of this reporting period seven (7) pads have been completed with MSA1 matting and sand berms. Approximately one (1) mile of road has been stabilized with sand cement. It is estimated that approximately 500,000 cubic yards of sand have been moved in Phase I for cuts, fills and berms. A reinforced earthmoving platoon and one vertical construction platoon have accomplished the majority of the construction for a total of 106,200 equipment-hours and 2,440 man-hours respectively.

(5) Water Treatment Unit: Rapid expansion of facilities at Cam Ranh Bay dictated the need to replace the five (5) available truck mounted water purification units which were unable to supply the increased demand for potable water. As a result, this command was tasked to install, house and prepare for operation a 9,000 GPM water treatment unit. A 30' x 50' tropicalized wood frame building with a 16' eave height was constructed to enclose the fifteen (15) ton Japanese unit. Approximately 200' of plumbing pipe and 1,000' of electrical wire were required to provide a complete installation from the new submersible pump to the existing storage tanks. A total of 4,104 man-hours were expended to complete this project.

(6) Dog Kennels: The project was received by this unit on 10 October 1967 for construction. The scope of work includes a 30' x 65' dog hospital, a 20' x 20' tack room and kitchen, two (2) each 30' x 147' kennels and two (2) each 27' x 30' kennels. All buildings will be tropicalized wood frame construction with the exception of the kennels. The four (4) kennel buildings are constructed with concrete floors and half walls. The remaining portions are enclosed with cyclone fencing and corrugated metal roofing over wooden trusses. Also included are an access road, a raw sewage lagoon and sewage treatment facilities, and a 250-barrel steel water storage tank with a 30 GPM pump. This project will provide medical and retraining facilities for all scout and sentry dogs in the II Corps Tactical Zone. Prefabrication has commenced on the panels for the wood frame buildings and trusses for the kennels. Completion date, for the kennels only, is 1 December 1967.

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(7) Marine Terminal Facility: Since the last reporting period all four (4) tank pads have been completed and erection of each of the four (4) 50,000-barrel welded steel tanks has begun. One tank is completely welded and approximately 98% complete. All ring steel has been tack-welded for two more tanks and the fourth has two rings erected. Four (4) DAC welders from CONUS and eight (8) military welders have accomplished the welding on the tanks to date. A representative of the manufacturer, Pittsburg-DesMoines Steel Company, was on site until 20 October 1967 to provide technical assistance. Remaining work includes final road stabilization, construction of a 20' x 20' quonset building, a booster pumping station (not yet designed) and completion of the tanks. During the reporting period 36,636 man-hours and 61,847 equipment-hours have been expended.

(8) Butler Building: This unit was directed to complete four (4) each 120' x 200' Butler warehouse buildings. These buildings were part of a six (6) building facility previously begun by civilian contractor. Two of the buildings were completed by the contractor and the third partially erected. Slabs for the remaining four (4) buildings had also been prepared by the contractor. During the reporting period two (2) complete buildings have been erected. No work has begun on the remaining two (2) buildings due to higher priority projects.

(9) Drainage System: In order to control monsoon runoff in two major cantonment areas and several large hardstand parking areas on the Cam Ranh Peninsula, this command was directed to construct a drainage system. The system consists of two each six (6) acre ponding areas, approximately 1,600 feet of 42 inch corrugated metal pipe (CMP), 660 feet of 48" CMP and 3,500 feet of sand cement lined ditches. The sides of all ditches have been sloped at 4:1 by means of a pre-shaped steel drag developed by the constructing unit (see sketch #1). One road crossing has been completed using 3 each 48" x 100 foot lengths of CMP culvert. A second crossing of 3 each 48" x 120 foot lengths of CMP is presently under construction. At the close of the reporting period 7,800 man-hours and 2,100 equipment-hours have been expended on this project.

(10) Port Open Storage Hardstand: This unit was directed to design and construct a hardstand between Piers 3 and 4 on Cam Ranh Peninsula. This hardstand area, constructed for Sealand Services Incorporated, covers a rectangular area approximately 400' x 500'. The design required a 10" sand cement pavement. Sand cement was prepared on a Johnson batch plant and transported to the site using 290H Scrapers. This phase took approximately 10 days, 24 hrs/day to complete. The asphalt paving was performed by another unit. The completed hardstand includes a 440V electrical distribution system to

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provide security lighting and power for refrigerated trailers. The entire project required 16,094 man-hours and 5,480 equipment-hours. This project was completed and transferred to Sealand Services on 31 October 1967.

(11) Communications Center: This facility consists of a fully air-conditioned, wood frame and plywood-sided 40' x 60' structure. The work required includes the installation of the 420,000 BTU air-conditioning system, lighting and the auxiliary generator. At this time the building has been framed and siding has been applied. Due to the nature of this facility, and the specialized materials which are unavailable in local depots, many items have been supplied directly through Signal Corps channels. One such item, corrugated asbestos roofing, has been supplied but in insufficient quantities. As a result progress is lagging slightly. A total of 5,700 man-hours have been expended to date.

(12) 8630-Man Cantonment Area:

(a) During this reporting period the following facilities have been completed:

1. Eight (8) BQ's-two (2) stories, 20' x 100' tropical wood frame
2. Eleven (11) troop billets-two (2) stories, 20' x 100' tropical wood frame
3. Six (6) quonset huts-20' x 40'
4. Two (2) mess halls-500 man, 40' x 100' tropical wood frame
5. Seven (7) latrines-burnout type, 10' x 30' tropical wood frame
6. Four (4) Showers-20' x 30' tropical wood frame

(b) This construction constitutes more than four (4) company size billet areas. These figures represent an increase in construction progress of 23% over the previous period. A total of 172,597 Engineer troop man-hours, 330,158 self-help man-hours and 88,128 Vietnamese man-hours have been expended to date. Approximately 1000 feet of drainage ditches and CMP culvert has been installed. Slopes of ditches have been stabilized with sand bags, asphalt cutback and an experimental material manufactured by Union Carbide (UCAR 131) that has proven highly successful for sand stabilization.

(c) An additional 1000' of roadway has been stabilized with sand cement. Road construction and drainage is approximately 65% complete. Equipment-hours expended have increased 4,970 over the previous reporting period for a total of 10,550 to date.

(13) Road Maintenance: One of this unit's major projects is road maintenance. A large portion of this requirement, however, has been generated as a direct result of the inability of the local R & U facility, operated by

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Pacific Architects and Engineers (PA&E), to maintain the roads satisfactorily on the Cam Ranh Peninsula. With the arrival of the monsoon season their capability has proven completely inadequate to cope with the problems encountered. As a result, this battalion has been tasked with the responsibility of making necessary emergency repairs to keep roads open throughout the peninsula. This additional effort by the battalion has required the expenditure of both man and equipment hours-that would otherwise be expended on more critical projects. These projects are those for which no other Engineer effort is available. However, since maintaining the roads in a trafficable condition is vital to the battalion's operations, as well as others, road repairs have received the necessary effort.

4. Logistics and Maintenance:

a. During the Period 1 August 1967 to 27 October 1967 the following direct support job orders were processed:

- (1) Total received 252
- (2) Total completed 241
- (3) Total outstanding 11

b. Only 25% of the repair parts requisitions submitted during this period were received:

- (1) Total requisitions submitted 3402
- (2) Total requisitions completed 878
- (3) Total requisitions outstanding 2524

c. The status of the Red Ball System is as follows:

- (1) Total requisitions submitted 539
- (2) Total requisitions completed 494
- (3) Total requisitions outstanding 45

d. Through the use of the Red Ball System, this unit was able to remove 289 items of equipment from deadline.

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Section II, Part I, Lessons Learned

1. Operations:

a. ITEM: Failures in Sand-Cement

Discussion: The accepted procedure for placing sand cement, after initial tilling and/or mixing has occurred, is to compact and shape the surface to the desired final grade. Once sand cement has received any initial compaction of the cutting of high spots and blading the loose material into low areas has led to later failures in the surface. Since the sand cement had not hydrated significantly it was felt that adding cut material to low spots would suffice. However, as the sand cement mixture cured, horizontal failure planes developed at the depth of the added material.

Observation: Once any degree of compaction has been attained, adding material to low spots must be accomplished by scarifying the area to which material must be added, blading in the additional material and recompact-ing. (Note: any piece of construction equipment placed on the surface will result in sufficient compaction to require scarifying prior to placing additional material.)

b. ITEM: Open Joints in Corrugated Metal Pipe Culvert (CMP)

Discussion: Use of CMP manufactured by different firms in the same run of pipe has led to unsatisfactory culverts. In many cases, the joints do not match closely enough to provide a tight fit. As a result wide gaps exist at the joints which allows fill material to be syphoned into the pipe by the flowing water.

Observation: CMP from only one manufacture should be assembled for any single run of culvert.

c. ITEM: Erosion of soil under or behind the paved linings of drainage ditches.

Discussion: Many of the concrete or sand cement lined ditches in the area of Cam Rany have been eroded from water flowing toward the ditch and working under the edge of the lining. This causes undermining and eventual failure of the lining.

Observation: On the outer edges of the ditch lining a bevel, or lip, can be fabricated approximately 18" - 24" long, sloping downward from the lining at an angle of 90 to 120 degrees. Compacting fill material over the lip allows water to flow into the ditch and prevents erosion under the lining. (see sketch #2)

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d. ITEM: Applying a uniform lift of cement over soil to be stabilized prior to the use of a Rototiller.

Discussion: After the cement bags have been opened and emptied over the soil to be tilled, a grader is required to spread the piles of cement evenly over the entire area. This operation requires that a highly skilled grader operator make several passes to obtain a uniform layer of cement. However, ruts from the grader tires prevent a uniform spreading of the cement. As a result, additional passes with the Rototiller are necessary to make up for nonuniform cement coverage.

Observation: Experience has indicated that the spreading of cement can be accomplished more effectively with a drag of cyclone or chain-link fencing towed behind the grader to remove ruts and eliminate windrows.

e. ITEM: Loss of drill steel in badly fissured granite.

Discussion: The granite quarry at Cam Ranh Bay has many fissures, fractures and faults at angles not perpendicular to drilling operations. Due to the flexibility of drill steel at lengths greater than ten (10) feet the direction of drill steel changes when a fault or fracture is encountered. These faults or fractures occur at irregular intervals every two (2) to three (3) feet. The lack of adequate track drills requires the extensive use of wagon and hand drills. Drilling to shallower depths with these drills had led to an increase in blast rock production due to the decreased amount of lost time from wedged drill steel.

Observation: Only drill to 10' depths in badly fissured rock when using hand drills and wagon drills.

f. ITEM: Placing roof steel for 50,000 barrel POL Storage Tanks.

Discussion: The erection set provided with the 50,000 barrel POL Storage Tank includes a device called an "Airplane Buggy". This device is used on top of the tank to move roof plates into their final position. Because of its size and weight, the "Buggy" is slow, cumbersome and difficult to use. A pneumatic winch was found better suited for this task, as it occupies less space, is easier to install and is lighter in weight. The winch is fastened to the steel frame at the top center of the tank. With a 250 CFM compressor on the ground providing power, the only moving part on the roof is the cable from the winch to the plate. The roof plates can be moved anywhere on the roof by guiding the cable over the steel rafters.

Observation: Roof plates on 50,000 barrel POL tanks can be placed more efficiently with a pneumatic winch than with the standard equipment found in the erection sets. (Nomenclature: winch, drum power operated, Ingersoll Rand, model HU, FSN 3950-368-5253).

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g. ITEM: Shaping a trapezoidal ditch in sand.

Discussion: A recent drainage project called for over 2,000' of 10' wide trapezoidal ditch with 4:1 side slopes. When the approximate grade on the ditch was attained, a grader attempted to shape the side slopes. Since the ditch was being cut in uncompacted dune sand the grader continually slid off the slope and was ineffective for shaping the slopes. A steel drag was devised that could be pulled behind a D-7E dozer. The drag was fabricated in the form of a template for the final shape on the ditch (see sketch #2) and affectionately named "The Buzzard". By attaching 3/4" steel cable between the various points of stress on the drag and dozer, and connecting the pull bar to the winch cable of the dozer, the drag can be elevated sufficiently to enable the dozer to maneuver. Future revisions include modifying the 10' 4 1/2" arms by angling them to the rear approximately 30 degrees to provide a plow effect. No tests have been run at this time on the revised configuration.

Observation: For sloping ditches in sand or other uncompacted material where close grade control is important a drag similar to the one in the sketch can be used effectively.

h. ITEM: Pre-Construction Conferences

Discussion: The need to have a meeting of the minds between the eventual user of a facility being constructed and the constructing unit has long been a recognized requirement. Experience has shown that when this meeting has not taken place, numerous problems have arisen and unnecessary delays, distractions and misunderstandings between the parties concerned have resulted. This unit has observed the practice of holding these conferences whenever construction of a new facility or area has been directed, including major road repairs where traffic would be affected. The results have been very satisfactory in that both the users and this unit have identified and resolved potential problem areas in time to avert many difficulties during construction.

Observation: The practice of pre-construction conferences be continued and stressed for all Engineer Units engaged in construction for other agencies.

2. Maintenance:

a. ITEM: Excessive wear of track idler yoke wear plates and wear plate pin holes on tractor, full tracked, D-7E, when used in sand.

Discussion: It was determined that excessive wear on idler yoke wear plates and pin holes was caused by the following:

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- (1) Tracks improperly adjusted, thus allowing the yoke to vibrate up and down.
- (2) Vibration causing excessive wear of pin holes, making them oversized.
- (3) Sand entering oversized pin holes causing excessive wear on plates and pins.

Observation: When operating in sand, excessive wear can be reduced by maintaining a track adjustment of $1\frac{1}{2}$ " to 2" above track support rollers as defined on page 6, paragraph 4 (6) (C), TM 5-2410-214-12 dated July 1966.

b. ITEM: Damage to the tongue on the 600 CFM Air Compressor and the 8 ton Low Bed Trailer when towed by the bulldozer D7E.

Discussion: A D7E dozer is used to pull 600 CFM air compressors and 8-ton low bed trailer carrying the crawler-type track drills up the steep narrow incline to the top of the rock quarry. The bulldozer has a hitch and not a pintle hook. The lowbed trailer and the 600 cfm air compressor have an eye and not a lunette. As a result when the dozer made short turns on the steep grade there was a tendency for the tongue to be twisted, causing damage or breaking the tongue.

Observation: This problem was solved by fabricating an assemble (see sketch #3) and attaching to it a standard pintle hook from a 5-ton dump truck. This permitted the rotation of the pintle hook when sharp turns were made and the swivel action of the assemble prevented damage to the tongue.

c. ITEM: Loss of ordnance automotive direct support maintenance capability under the "E" Series TO&E.

Discussion: The Engineer construction battalion as previously organized under TO&E 5-115 D was capable of performing its own direct support maintenance on both engineer equipment and ordnance automotive equipment. The current "E" series TO&E for the construction battalion deletes from the Direct Support Maintenance Platoon within Company A both the Shop Section and the Ordnance Direct Support Maintenance Section and adds a Battalion Maintenance Section capable only of performing organizational maintenance support. The loss of this ordnance direct support maintenance capability necessitates the evacuation of critical vehicles to the Direct Support Unit (DSU) for direct support level maintenance formerly performed within the battalion.

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(a) A survey was conducted during the period 1-30 Sep 67 to determine the ability of the DSU operating under the COSTAR concept to provide adequate maintenance support. Results of the survey indicate that the vehicle days lost in excess of those that would have been lost had the maintenance been performed within the battalion are as follows:

1. Trk, Cargo, 2 1/2 T:	6 Vehicles-27.25 (+) days
*2. Trk, Dump, 5 T:	6 Vehicles-15.42 (+) days
3. Trk, Trac, 5 T:	3 Vehicles-29.84 (+) days
4. Trk, Util, 1/2 T:	2 Vehicles-12.42 (+) days
5. Trk, Tank, Wtr Dist:	1 Vehicle - 3.50 days
*6. Trk, Wrocker, 5 T:	1 Vehicle -24.50 (+) days
*7. Trk, Dist, Bitum:	1 Vehicle - 8.50 days

II

* - Denotes critical construction equip.

(+) - Vehicle(s) not returned at the end of the survey period

Observation: It is evident from the above that the DSU cannot compete with the effectiveness of the ordnance direct support when performed by this unit under the "D" series TO&E. The key difference between the DSU's support and the battalion's old direct support shop is one of "priority". Under the old concept the using unit commander had control of maintenance priorities which were keyed to the operational mission. Under the COSTAR concept, this control is exercised by the DSU which may or may not be guided by a supported unit's mission.

Action Taken: This unit has forwarded correspondence through appropriate channels requesting the retention of the ordnance direct support capability that was organic to the engineer construction battalion under the "D" series TO&E. A recommendation for a Modification TO&E is currently under study at the US Army Engineer Command, Vietnam (Prov).

3. Logistics:

ITEM: Unavailability of certain construction materials and items of equipment.

Discussion: Support and response by Cam Ranh Bay Depot have been good for standard construction materials, but items for more sophisticated designs are frequently difficult to obtain. Of greater concern, and cause of much lost time in project completion, is the shortage of many major items of TO&E equipment, such as 10 and 20 ton cranes, rough terrain fork lifts, water distributors, road graders, scoop loaders and rollers. The situation is further complicated by what appears to be an inordinate number of requisitions lost or rejected for unaccountable reasons at the 14th Inventory Control Center.

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Action Taken: A letter requesting assistance regarding the latter situation has been forwarded to the Director of Supply, Can Ranh Bay Depot.

4. Medical:

ITEM: Soldiers with abdominal pain and diarrhea resulting in debilitating illness and time loss. Stool studies showed the illness to be caused by *Entamoeba histolytica*.

Discussion:

(a) *Entamoeba histolytica* (amebiasis) is a worldwide problem. This parasite is found in up to 50% of the people in nations where sanitation is a problem. The parasite is found primarily in the colon, but may spread to the brain, lungs, and more frequently the liver. There have been a number of cases of amebic abscesses reported in American soldiers in Vietnam.

(b) The reservoir of this infection is the asymptomatic carrier. *Entamoeba histolytica* is not found in non-human reservoirs. Soldiers with the acute phase pass a form of the parasite that is fragile, therefore too short lived outside of the body to be infective to others. The soldier with the chronic asymptomatic phase passes cysts of parasite which are hardy and remain infective for long periods of time. This means that the carriers must be first diagnosed and then treated to eliminate the reservoir of the parasite.

(c) *Entamoeba histolytica* is spread by the "feces-to hand-to food" or the "feces-to fly-to food" route. The consumption of nonpotable water is also a means of spreading this parasite.

Observation:

(a) Soldiers with recurrent abdominal complaints or persistent diarrhea be checked for parasitic disease.

(b) Potable water must be assured for consumption and nonpotable water for showers and other uses be chlorinated to 10 ppm.

(c) The "feces-fly-food" and "feces-hand-food" chain be broken by:

1. Local KPs are not to handle food or utensils which are used by the soldier without further processing to assure elimination of contaminants.

2. Soldiers serving as cooks and mess hall workers be frequently inspected for cleanliness and adequate hand washing devices be made readily available for such men.

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EGACBB-AD

10 November 1967

SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65) for Quarterly
Period Ending 31 October 1967

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3. Food handlers should have stool checks to rule out parasitic illness.

4. Mess halls and latrines should be made flyproof.

(d) A random sampling of the men of any unit with a high incidence of amebiasis should be made to gain information as the number of asymptomatic carriers in this unit.

(e) Men leaving a unit with a high incidence of amebiasis should have a note attached to their medical record requesting that they not be allowed to handle food in their new unit until at least one stool check has been run to rule out parasitic disease.

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10 November 1967

SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65) for Quarterly
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Section II, Part II, Lessons Learned

Commanders Comments: The turn-over of construction equipment from the civilian contractor to the Army provided us with many valuable pieces of equipment. However, the repair parts supply has become almost nonexistent as the contractor depots have cut back on their operations. As the military supply system has not yet established agencies to procure the needed parts, many heavy construction items are idle with controlled cannibalization unable to fill the requirement. This problem has been discussed with representatives of USA Mobility and Equipment Command as well as 1st Logistical Command. A similar problem is the issue of new equipment, such as the 20-ton Euclid dump trucks and the D-9 tractors, with little or no repair parts back-up available. Situations such as these lead to the escalation of "scrounging" to get along. This promotes bad habits throughout the command even on standard pieces of equipment. An aggressive program to procure repair parts for these non-standard items is needed.

Charles J. Fiala

CHARLES J. FIALA
LTC, CE
Commanding

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EGA-CO (10 November 1967) 1st Ind

SUBJECT: Operational Report--Lessons Learned (RCS CSFOR-65), for
Quarterly Period Ending 31 October 1967.

DA, Headquarters, 35th Engineer Group (Const), APO 96312, 23 November 1967

TO: Commanding General, 18th Engr Bde, ATTN: AVBC-C, APO 96377

1. I have reviewed the Operational Report - Lessons Learned submitted by the 87th Engineer Battalion and consider it an accurate account of unit activities and accomplishments.

2. I concur with the observations and recommendations of the battalion commander with the following additional comments:

a. Section I, 3b (5), Water Treatment Unit: The water treatment unit of Cam Ranh Bay produces 9000 gallons of water per hour of operation.

b. Section I, 3b (13), Road Maintenance: On the peninsula, Pacific Architects and Engineers (PA&E) have hauled considerable quantities of rock for road shoulder stabilization and pothole repair. Their equipment, while limited, is actively working on the roads of the peninsula. PA&E, however, does not appear to be mobilized to the extent required to maintain all the roads of Cam Ranh (in excess of 60 miles with only 15 miles of asphaltic pavement).

c. Section II, Part I, 2c, Ordnance Direct Support Capability: This item reinforces comments made in the 35th Engineer Group's ORIL for this reporting period.

d. Section II, Part I, 3, Logistics:

(1) Recently all units of this command have been given copies of Depot's Authorized Stockage List (ASL) for use as a guide in the design phases of a project. This should help ease part of the supply problem for construction units. Many of our projects are becoming more sophisticated, however, and their design will probably continue to include items not included in the supporting depot's ASL.

(2) The major equipment shortages reflected in this paragraph are short throughout the 35th Engineer Group and are reflected in the bi-weekly Periodic Logistical Report (PLR) of this organization.

(3) This headquarters has initiated a letter concerning the rejection of "red ball" requisitions for repair parts for contractor equipment because an end item FSN is not indicated on the requisition. Civilian contractor equipment taken over and operated by the Army generally does not have an assigned FSN.

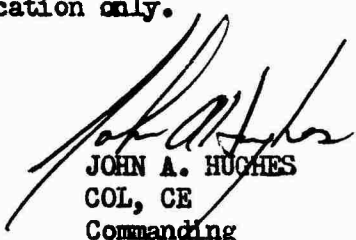
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EGA-CO (10 November 1967)

SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for
Quarterly Period Ending 31 October 1967.

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JOHN A. HUGHES
COL, CE
Commanding

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AVBC-C (10 Nov 67) 2nd Ind CPT Storat/jah/DBT-163
SUBJECT: Operational Report -- Lessons Learned (RCS CSFOR-65) for
Quarterly Period Ending 31 October 1967

Headquarters, 18th Engineer Brigade, APO 96377

28 NOV 1967


TO: Commanding General, U.S. Army Engineer Command, Vietnam (Prov),
ATTN: AVCC-P&O, APO 96375

1. This headquarters has reviewed the report submitted by the 87th Engineer Battalion (Const), as indorsed, and considers it an accurate and excellent description of the unit's activities and accomplishments during the reporting period.

2. Concur with the Battalion Commander's observations and recommendations and the Group Commander's Indorsement with the following comments added:

a. Reference Section II, Part I, para 2c. MTOE 5-117E submitted to USAECV(P) on 20 October 1967 recommended the addition of the Shop Section and Ordnance Direct Support Maintenance Section within Company A of all construction battalions.

b. Reference Section II, Part I, para 3. Major equipment shortages listed in this paragraph exist throughout the 18th Engineer Brigade.


HAROLD J. ST CLAIR
Colonel, CE
Deputy Commander

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AVCC-P&O (10 Nov 67)

3rd Ind

SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for Quarterly
Period Ending 31 October 1967

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HEADQUARTERS, UNITED STATES ARMY ENGINEER COMMAND
VIETNAM (PROV), APO 96491

TO: Commanding General, United States Army Vietnam, ATTN: AVHGC-DH,
APO 96375

The subject report, submitted by the 87th Engineer Battalion (Construction), has been reviewed by this headquarters and is considered adequate.

FOR THE COMMANDER:



RICHARD B. BIRD
Captain, AGC
Assistant Adjutant General

Cys Furn:

CG, 18th Engr Bde
CO, 35th Engr Gp
CO, 87th Engr Bn (Const)

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AVHGC-DST (10 Nov 67) 4th Ind (FOUO)
SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65) for Quarterly
Period Ending 31 October 1967

HEADQUARTERS, UNITED STATES ARMY VIETNAM, APO San Francisco 96375 27 DEC 1967

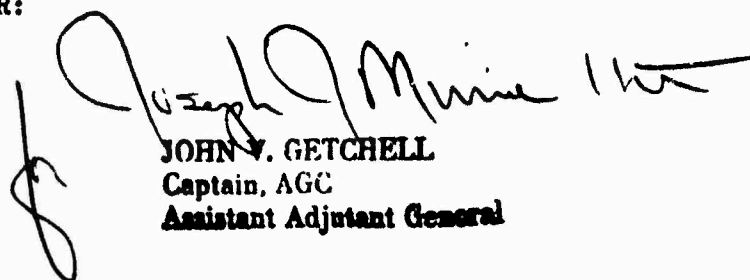
TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT,
APO 96558

1. This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 October 1967 from Headquarters, 87th Engineer Battalion (Construction) (BAGA) as indorsed.

2. Pertinent comment follows: Reference item concerning the turnover of construction equipment from the civilian contractor to the Army, section II, part II, page 15: Concur. The US Army Engineer Command, Vietnam (Provisional) published a letter of instruction on 9 October 1967, that establishes an interim policy and procedures for obtaining parts support. Provisions have been made for units to use the Red Ball requisitioning system to support deadlined equipment. A machine printout has been developed containing a cross reference of over 100,000 repair parts line items. The 1st Logistical Command is developing a commercial contract to provide repair parts for DS/GS maintenance of non-standard equipment. New equipment, such as the Euclid 20 Ton Dump Trucks and the D-9 Tractor, were procured with a one year supply of repair parts. The organizational level repair parts for the Euclid Dump Trucks were a direct issue to the using units. Repair parts for the D-9 Tractors and replacement parts for the Euclid Trucks are being made available through normal supply channels.

3. A copy of this indorsement will be furnished to the reporting unit through channels.

FOR THE COMMANDER:


JOHN V. GETCHELL
Captain, AGC
Assistant Adjutant General

Copies Furnished:

HQ, 87th Engr Bn
HQ, US Army Engr Comd

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GPOP-DT(10 Nov 67)

5th Ind

SUBJECT: Operational Report for the Quarterly Period Ending 31 October
1967 from HQ, 87th Engr Bn (UIC: WBAGAA) (RCS CSFOR-65)

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HQ, US ARMY, PACIFIC, APO San Francisco 96558 12 JAN 1968

TO: Assistant Chief of Staff for Force Development, Department of the
Army, Washington, D. C. 20310

This headquarters has evaluated subject report and forwarding
indorsements and concurs in the report as indorsed.

FOR THE COMMANDER IN CHIEF:

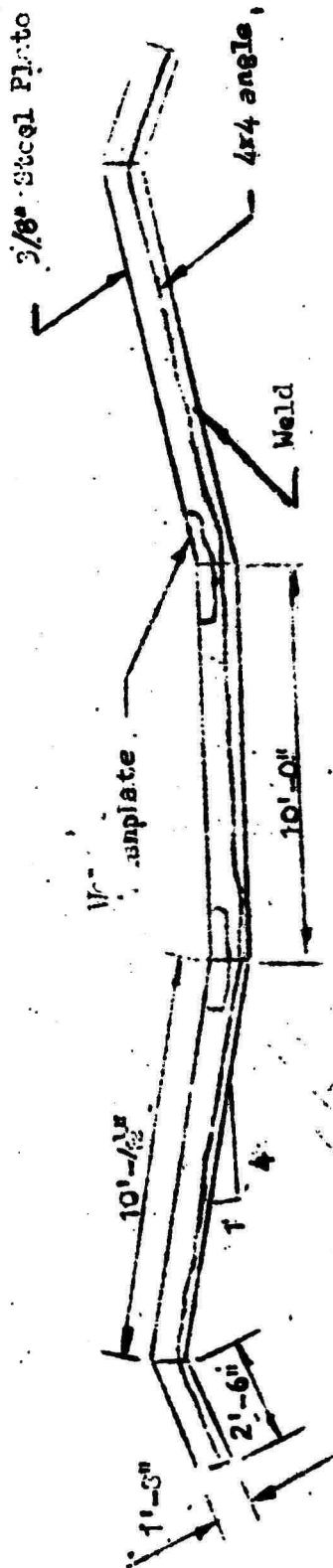


HEAVRIN SNYDER
CPT, AGC
Asst AG

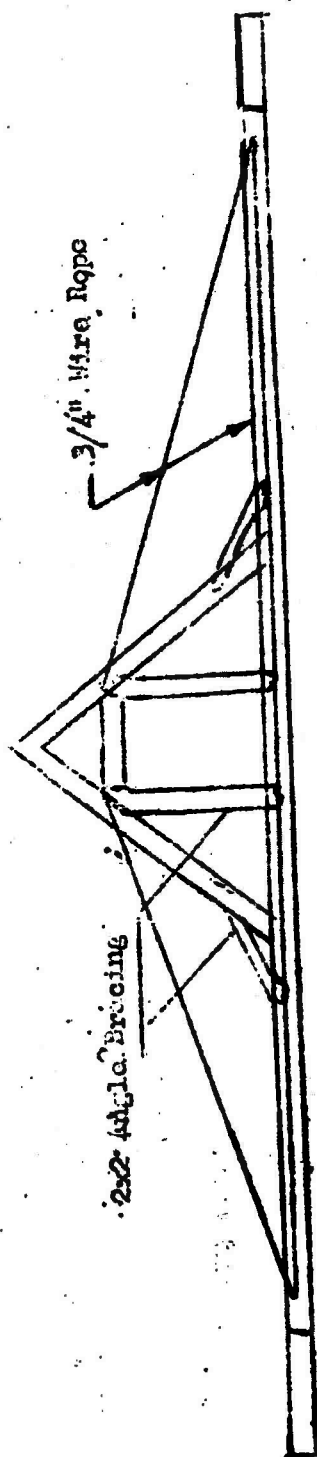
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The Buzzard



ELEVATION



PLAN

NO SCALE

22
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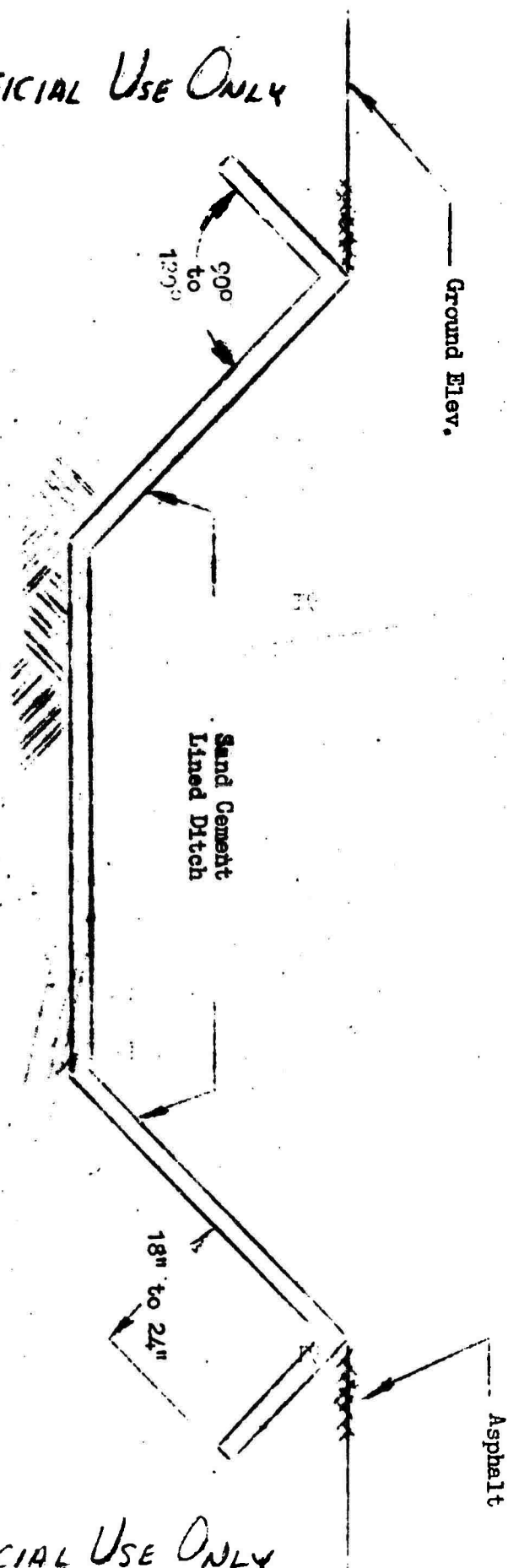


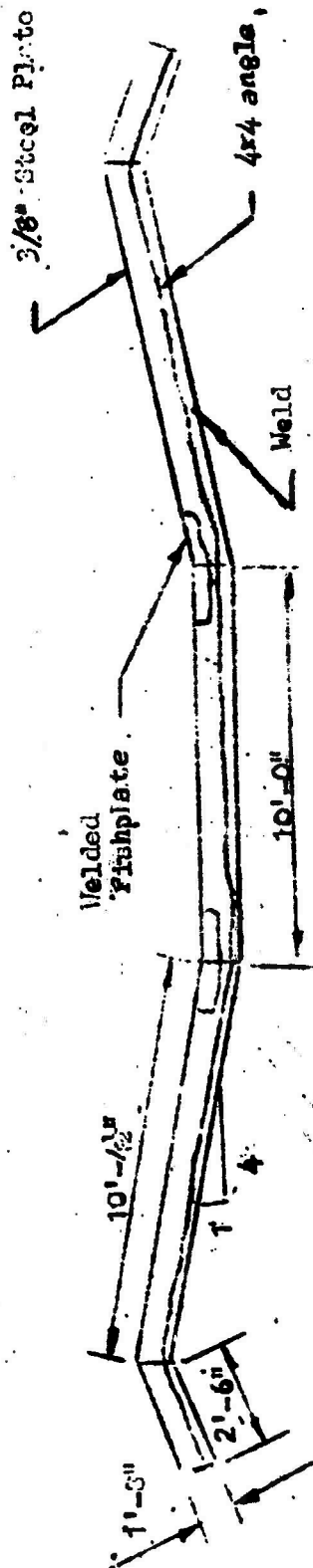
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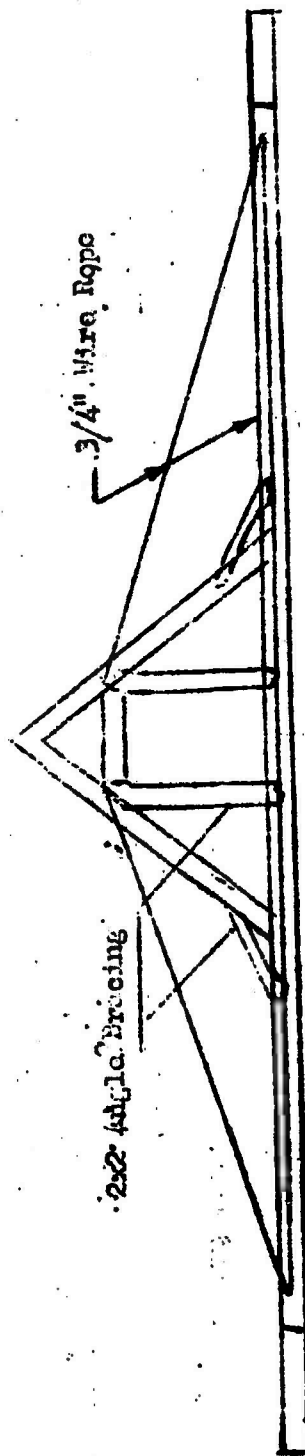
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ELEVATION



PLAN

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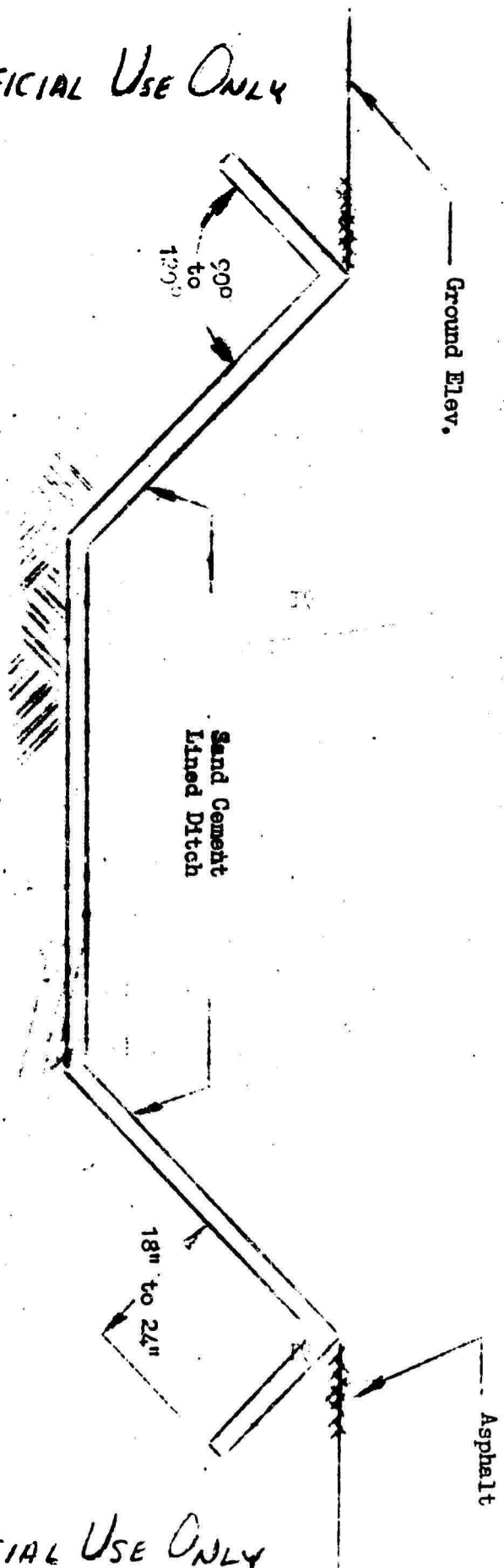


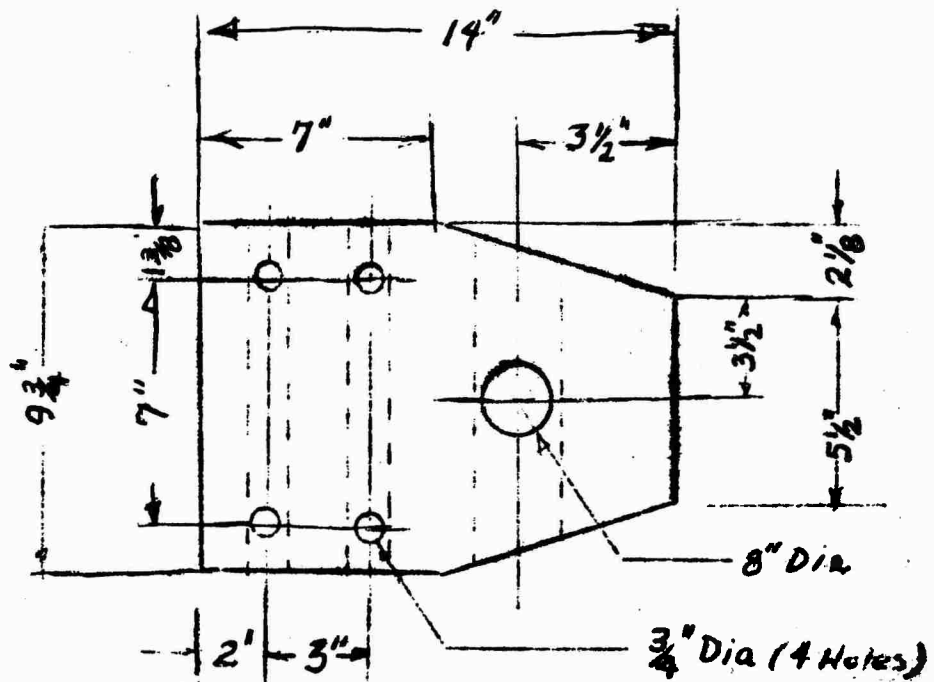
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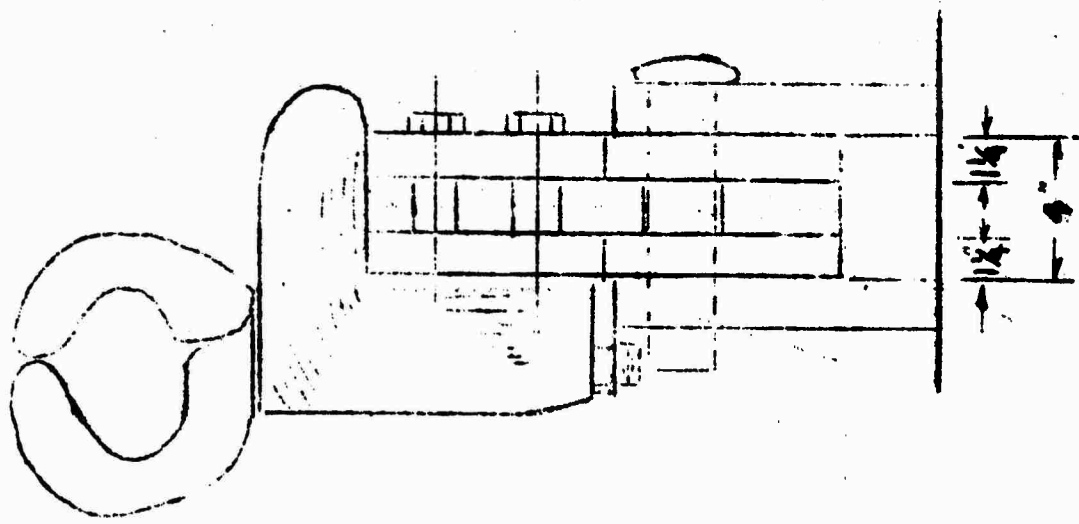
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Top View



Side View
With Hitch
Figure No. 3

TOE HITCH ADAPTER
FOR D7E BULLDOZER

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Security Classification

DOCUMENT CONTROL DATA - R & D

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